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SHORT REPORT

Sickness absence frequency among women working in hospital care

Corné A. M. Roelen^{1,2}, Jolanda A. H. Schreuder¹, Petra C. Koopmans^{2,3}, Bente E. Moen⁴ and Johan W. Groothoff²

Background	Frequent short sickness absences result in understaffing and interfere with work processes. We need more knowledge about factors associated with this type of absence.
Aims	To investigate associations between the frequency of previous sickness absence and self-reported perceptions of health and work.
Methods	Cross-sectional study of female hospital care workers in which health, work characteristics and coping styles were assessed by questionnaire and linked to the number of sickness absence episodes recorded in the preceding 5 years using negative binomial regression analysis for counts distinguishing between short (1–7 days) and long (>7 days) episodes of absence after adjusting for age and duration of employment in December 2007 and hours worked between 2003 and 2007.
Results	Of 350 women employed for at least 5 years, 237 (68%) answered the questionnaire. The hours worked over the 5 year period [rate ratio (RR) = 1.2] and problem solving coping style score (RR = 1.1) were positively associated with the number of short sickness absence episodes. Age (RR = 0.8) and good general health (RR = 0.7) were inversely related to the number of both short and long episodes. Self-reported mental health and work characteristics were not shown to be related to the frequency of sickness absence.
Conclusions	Hours worked, problem-solving coping style, age and general health showed associations with the frequency of previous sickness absence among women who had worked at least 5 years in health care. Future prospective studies on the frequency of sickness absence should consider the impact of these factors further.
Key words	Control; job demands; rewards; self-rated general health; self-rated mental health; sickness absence frequency; support; work efforts.

Introduction

Sickness absence research has concentrated on long-term absence and disability because of the high associated social and economic costs. Short-term sickness absence, while not as costly, when frequent results in understaffing and interferes with work processes. Frequent short sick-

ness absences are often interpreted as ‘voluntary’ or as a coping behaviour [1]. As employees incurring frequent short sickness absence episodes have been shown to be at increased risk of future long-term absence [2], better understanding of the factors associated with short sickness absences is important.

Methods

This cross-sectional study linked self-reported perceptions of health and work among women working in hospital care to the number of recorded sickness absence episodes in the preceding 5 years. In The Netherlands when employees take sick-leave, a sick report is sent electronically to the occupational health registry on the first day of absence and likewise on the day work resumes. Sickness absence is medically certified by an occupational physician from the fifth week of absence; shorter episodes are self-certified. Short (1–7 days) and long (>7 days) sickness absence episodes

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recorded between 1 January 2003 and 31 December 2007 were counted for each subject. Ethical approval was sought from the Medical Ethics Committee of the University Medical Centre Groningen, which advised that ethical approval was not required. All employees agreed to the anonymized use of their sickness absence data and questionnaire results for scientific analysis.

The questionnaires were distributed by the human resources department and returned by post to our occupational health service in December 2007. General health and mental health scores were determined using the Short Form-20 (SF-20) [3]. Higher scores indicate better health. Job demands, control and support were measured using the 10-item short form derived from the Dutch Job Content Questionnaire [4]. High scores correspond to high demands, control and support at work. Work efforts, rewards and over commitment (i.e. the inability to withdraw from work obligations) were assessed by the Dutch Effort Reward Imbalance Questionnaire [5] with high scores corresponding to high efforts, rewards and over commitment. Coping styles were assessed using the 19-item version of the Utrecht Coping List [6].

All scores were expressed as percentages of the maximum score possible for each subscale. The two general health subscales of the SF-20 were highly inter-correlated resulting in collinearity. The overall rating of health was made on a five-point Likert-type scale ranging from

0 (bad) to 4 (excellent) and this data were included in a negative binomial regression model [7] together with mental health, job demands, control, support, work efforts, rewards, over commitment and coping style scores. Age and duration of employment in December 2007 were added as covariates to the regression model together with the hours worked between 2003 and 2007. The results are presented in rate ratios and their 95% confidence intervals. We also calculated the Wald statistic to express the strength and variability of associations in one measure.

Results

The characteristics of the 350 women who were employed for at least 5 years in December 2007 are presented in Table 1 (available as Supplementary data at *Occupational Medicine* Online). There was a 68% (237) response rate. The sickness absence characteristics did not differ from those of non-participants.

The hours worked during the 5 year period showed a positive relationship with the sickness absence frequency (Table 2). To a lesser extent, the problem-solving coping style score was also positively associated. These relationships were specifically with short absence episodes. Age and good general health were inversely associated with the frequency of both short and long sickness absence episodes.

Table 2. Factors associated with the frequency of sickness absence episodes

	Questionnaire score	Total sickness absence episodes		Short sickness absence episodes		Long sickness absence episodes	
	Mean (SD)	RR (95% CI)	Wald	RR (95% CI)	Wald	RR (95% CI)	Wald
Age (in years) ^a	43.1 (8.3)	0.8 (0.6–0.9)**	14.9	0.8 (0.6–0.9)**	12.5	0.7 (0.6–0.9)**	7.3
Hours worked ^b	3479 (1315)	1.2 (1.1–1.2)**	41.1	1.2 (1.1–1.2)**	41.2	1.0 (1.0–1.2)**	7.9
Years employed ^a	15.6 (7.3)	1.2 (1.0–1.4)	2.8	1.2 (1.0–1.4)*	4.2	1.0 (0.8–1.3)	0.0
General health	74 (20.2)	0.7 (0.6–0.8)**	18.0	0.7 (0.6–0.8)**	13.8	0.6 (0.5–0.8)**	13.5
Mental health	83 (14.8)	1.0 (1.0–1.0)	0.4	1.0 (1.0–1.0)	0.4	1.0 (1.0–1.0)	0.2
Demands	74 (16.2)	0.9 (0.9–1.0)	1.3	0.9 (0.8–1.0)	1.5	1.0 (0.8–1.1)	0.4
Control	75 (12.5)	1.1 (1.0–1.2)	1.8	1.1 (1.0–1.2)	1.6	1.1 (0.9–1.3)	0.7
Support	79 (11.5)	1.0 (0.9–1.0)	0.8	1.0 (0.9–1.0)	1.2	1.0 (1.0–1.1)	0.2
Efforts	71 (12.4)	1.0 (1.0–1.1)	0.0	1.0 (1.0–1.1)	0.1	1.0 (0.9–1.1)	0.0
Rewards	68 (13.0)	1.0 (0.9–1.0)	0.6	1.0 (0.9–1.0)	0.6	1.0 (0.9–1.0)	0.6
Overcommitment	49 (11.3)	1.0 (0.9–1.0)	1.8	1.0 (0.9–1.0)	2.4	1.0 (0.9–1.1)	0.4
Coping style ^c							
Problem solving	69 (17.8)	1.1 (1.0–1.1)**	8.4	1.1 (1.0–1.1)**	6.9	1.1 (1.0–1.1)	3.1
Seeking social support	54 (18.5)	1.0 (0.9–1.1)	0.0	1.0 (0.9–1.1)	0.0	1.0 (0.9–1.1)	0.1
Showing emotions	54 (20.7)	1.0 (0.9–1.1)	0.2	1.0 (0.9–1.1)	0.0	1.1 (0.9–1.3)	1.7

Questionnaire scores and results of negative binomial regression analysis; the table shows RRs and their 95% CI as well as the Wald statistic calculated as $(b/SE)^2$ in which estimate b reflects the strength of the observed associations and standard error (SE) the variability. * $P < 0.05$, ** $P < 0.01$. CI, confidence interval.

^aRRs show the effect of a 10-point increase on these scales.

^bRR shows the effect of a 100-point increase in the mean hours worked.

^cPalliative and avoidant coping scales were excluded because of their low reliability (Cronbach's $\alpha = 0.54$ and $\alpha = 0.38$, respectively).

Discussion

Hours worked and problem-solving coping style score were positively associated with the frequency of sickness absence whereas both age and good general health were inversely related. Perceived work characteristics and over commitment were not shown to be related to sickness absence frequency.

The study had a cross-sectional design precluding prospective associations and conclusions on causal relations. Moreover, the study was confined to women working long term in one organization and it has been reported that there are differences in sickness absence practices and cultures between companies [8].

Age and general health were the variables consistently associated with all measures of sickness absence frequency. Mental health scores were not associated. Hanebuth *et al.* [9] also failed to find an association between mental health and sickness absence. This may indicate that employees with mental health problems have been selected out of the population or that subjects were more willing to report poor physical health than mental health problems.

As the number of hours worked was related to the frequency of short sickness absence episodes, it was unexpected to find no relationship with work characteristics. In a cross-sectional study of 1726 Swedish dental clinic employees, physical load, influence on work and support at work were significantly associated with overall sickness frequency [10]. It is possible that associations between work characteristics and the frequency of sick-leave were attenuated in our study by inter-individual variation or by sickness absence data measured over a 5 year period. It was also unexpected to find no relationship between sickness absence frequency and over commitment as employees who find it difficult to withdraw from work obligations might be expected to remain at work despite health problems.

Behavioural factors are known to play a role in short-term rather than long-term sickness absence [1]. We found that problem-solving coping abilities were positively associated with the frequency of short episodes. Such abilities involve finding possible solutions to remove stressors and are observed in persons who are self-efficacious, persistent and assertive. The hospital from which the study population was recruited has a strict sick-leave policy. It is possible that the more assertive employees are more likely to take sick-leave despite strict policies.

To test our findings, further prospective studies are needed to assist the development of policies to ensure the effective management of frequent sickness absence. Such studies should particularly examine the impact of employee age, work hours, general health and coping styles.

Key points

- This cross-sectional study showed that age and good general (but not mental) health were inversely associated with the frequency of previous short and long episodes of sickness absence among women working at least 5 years in health care.
- The number of hours worked and the subjects' problem-solving coping styles were positively associated with the frequency of previous short sickness absence episodes.
- Prospective research to identify determinants of sickness absence frequency should include age, work hours, general health and coping styles.

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Conflicts of interest

None declared.

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